

DISSEMINATING SCHOLARSHIP OF TEACHING AND LEARNING: USING GRASS ROOTS NETWORKING TO SHARE RESEARCH AND INFLUENCE TEACHING PRACTICE

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BACKGROUND

Most mathematicians develop their teaching practice through a combination of on the job experience and guidance from colleagues. However this preparation may not be sufficient to equip them to face the many challenges of teaching undergraduate mathematics, including diverse first-year cohorts, incorporation of new teaching technologies and student disengagement. However due to research priorities and high workloads, many academics do not have the time or capacity to actively seek out information or assistance in developing their approach to teaching (Cretchley, 2009; Probert, 2014).

There is an active research community in undergraduate mathematics education that disseminates its research findings and teaching innovations through workshops, conferences, articles and websites. However the impact of these activities can be limited to those already engaged in scholarship of teaching and learning (SOTL) and may not reach the wider audience of teaching academics. This latter group is more likely to be interested in practical information and advice relating to implementation of teaching innovations, which are not generally presented in formal academic sources (Southwell, Gannaway, Orrell, Chalmers, & Abraham, 2010).

PURPOSE

The First Year in Maths project (FYiMaths) identified many challenges for those teaching first-year mathematics, including limited access to information about teaching practices in mathematics at other universities and limited engagement with current research in SOTL. This motivated further investigation to identify mathematician's information needs, their preferred methods of information seeking and how these factors relate to the way information about learning and teaching is disseminated.

METHODOLOGY

This qualitative study involved semi-structured interviews with 13 mathematicians and statisticians teaching in undergraduate programs in Australian universities. Using a phenomenological approach to analysis, the interviews were coded to identify the main themes in relation to information seeking and teaching practice.

CONCLUSIONS

The study found that mathematicians needed discipline specific, practical and evidence-based information and advice about teaching, but that there were a number of barriers to them finding relevant information. Time pressures and past difficulties in locating useful information meant they did not actively search traditional academic journals, the internet or libraries. The main sources of information were trusted colleagues, local presentations and seminars on teaching initiatives, mentors and institutional working groups. These information seeking methods were largely passive, involving referral of information from trusted sources and accidental discovery. Their natural information-seeking behavior reflected a strong interest in networking and accessing shared discipline knowledge. This study indicates that there is potential for grass roots discipline networks and communities of practice for improving access to information to support the development of scholarly teaching. The findings indicate that dissemination of research and teaching innovations should involve a program of

targeted presentations, engagement with discipline networks and development of connections with targeted academic faculties and schools to successfully engage with peers.

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